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Infinite Analysis 2010

Developments in Quantum Integrable Systems

edited by Atsuo Kuniba, Tomoki Nakanishi,

Masato Okado and Yoshihiro Takeyama

August, 2011

**Research Institute for Mathematical Sciences
Kyoto University**

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June 14 ~16, 2010

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August, 2011

Research Institute for Mathematical Sciences

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PREFACE

This volume of RIMS Kôkyûroku Bessatsu is a collection of research and survey articles which were contributed by invited speakers of the RIMS conference “Infinite Analysis 2010, Developments in Quantum Integrable Systems”, which was held at the Research Institute for Mathematical Sciences (RIMS) of Kyoto University from June 14 through June 16, 2010.

The aim of the conference was to overview recent developments in quantum integrable systems and related topics. There were given 15 lectures and more than 60 participants during the conference.

It is our pleasure that this volume collects 11 contributions from the speakers. All papers here have been refereed and are in their final forms.

The conference was organized by Michio Jimbo, Tetsuji Miwa and the editors of this volume.

We would like to express our sincere gratitude to all the participants, invited speakers and RIMS secretaries who have made the conference successful and the anonymous referees of articles of this volume.

Editors: Atsuo Kuniba (University of Tokyo)
 Tomoki Nakanishi (Nagoya University)
 Masato Okado (Osaka University)
 Yoshihiro Takeyama (University of Tsukuba)

Infinite Analysis 2010
Developments in Quantum Integrable Systems

June 14 – 16, 2010
Room 111, RIMS Kyoto University

PROGRAM

June 14 (Mon)

- 9:30 – 10:30 Tetsuji Miwa (Kyoto University)
Omega Trick in XXZ model
- 10:40 – 11:40 Christian Korff (University of Glasgow)
Quantum Integrable Systems and Enumerative Geometry I:
A free fermion formulation of quantum cohomology
- 13:30 – 14:30 Hidetoshi Awata (Nagoya University)
Five-dimensional AGT Relation, q-W Algebra and Deformed β -ensemble
- 14:40 – 15:40 Yasushi Komori (Rikkyo University)
Multiple Bernoulli polynomials and multiple L -functions of root systems
- 16:00 – 17:00 Masato Okado (Osaka University)
Stable rigged configurations and $X=M$ for sufficiently large rank

June 15 (Tue)

- 9:30 – 10:30 Christian Korff (University of Glasgow)
Quantum Integrable Systems and Enumerative Geometry II:
Crystal limit and the WZNW fusion ring
- 10:40 – 11:40 Rinat Kashaev (Université de Genève)
Introduction to quantum Teichmüller theory
- 13:30 – 14:30 Tomoki Nakanishi (Nagoya University)
Dilogarithm identities in conformal field theory and cluster algebras
- 14:40 – 15:40 Roberto Tateo (Università di Torino)
The ODE/IM correspondence and its applications
- 16:00 – 17:00 Tomohiro Sasamoto (Chiba University)
Height distributions of 1D Kardar-Parisi-Zhang equation

June 16 (Wed)

9:30 – 10:30 Roberto Tateo (Università di Torino)

Thermodynamic Bethe Ansatz and the AdS/CFT correspondence

10:40 – 11:40 Yuji Satoh (Tsukuba University)

Gauge/string duality and thermodynamic Bethe ansatz equations

13:30 – 14:30 Rinat Kashaev (Université de Genève)

Discrete Liouville equation and quantum Teichmüller theory

14:40 – 15:40 Kentaro Nagao (Nagoya University)

Instanton counting with adjoint matters via affine Lie algebras

16:00 – 17:00 Masahito Yamazaki (Institute for the Physics and Mathematics of the Universe)

Dimer, crystal, free fermion and wall-crossing

Organizers: Michio Jimbo (Rikkyo University)
Atsuo Kuniba (University of Tokyo)
Tetsuji Miwa (Kyoto University)
Tomoki Nakanishi (Nagoya University)
Masato Okado (Osaka University)
Yoshihiro Takeyama (University of Tsukuba)

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